

WHAT IS CLAIMED IS:

1. A connection arrangement for mounting on a circuit board, which includes a first connector having a housing with an opening leading to a cavity, said first connector having a contact arrangement that includes first and second contacts each mounted on said housing and each being connectable to the
- 5 circuit board, said first contact including a moveable beam lying in said cavity and biased upward toward an initial position in which said beam engages said second contact, said connection arrangement including a plug with a frame and a plug contact part that can be moved down through said opening to engage
- 10 second contact, including:

walls forming a stop lying under the beam for limiting its downward movement; and wherein

- said plug contact part is moveable primarily upward and downward in said frame, and said plug includes a spring that urges said plug contact part to move
- 15 downwardly relative to said frame.

2. The connection arrangement described in claim 1 wherein:

said first connector has an outer contact, and said plug has a plug outer contact, said first connector and plug are moveable together to a fully mated position at which said outer contacts are engaged;

- 5 in said fully mated position, said plug contact part presses said beam against said stop.

3. The connection arrangement described in claim 1, wherein:

said beam comprises a first substantially flat beam portion, a second beam portion extending largely downwardly towards the circuit board from the first beam portion, and a third beam portion extending largely horizontally from a bottom of said second beam portion, and said plug contact part is positioned

to push down said third beam portion against the stop.

4. The connection arrangement described in claim 1, wherein:
when the first connector is mounted on a printed circuit board, the stop
is formed by an area of the circuit board.

5. The connection arrangement described in claim 1, including:
a portable transceiver having a transmit/receive circuit and a portable
antenna;

a docking station with a docking station antenna;

5 said first connector mounted on said portable transceiver and said plug
mounted on said docking station;

10 said antennas are connectable to said first and second contacts to
disconnect the portable antenna from the transmit/receive circuit and connect
the docking station antenna to the transmit/receive circuit when the portable
transceiver is docked to said docking station.

6. A connection arrangement that includes a circuit board with
conductive traces and a connector mounted on the board, wherein:

said connector includes a housing with a cavity and an opening leading
to said cavity;

5 first and second contacts each mounted on said housing and connected
to one of said traces on the board, said first contact including a moveable beam
lying in said cavity and biased against said second contact but deflectable
downward out of engagement with said second contact;

10 stop means lying directly under said beam for stopping downward
movement of said beam.

7. The connection arrangement described in claim 6 wherein:
said stop means comprises an area of said circuit board.

8. The connection arrangement described in claim 6 wherein:

said first contact has a mounted part mounted on said housing and a beam that extends forwardly from said mounted part, said beam having a beam front portion with a tongue extending back toward said mounted part and downward toward said circuit board, from the beam front portion, wherein the movement of the beam is limited by the distance between a lower end of the tongue and the stop means.

9. A connector system comprising a receptacle and a plug for mating with the receptacle, wherein the receptacle includes a housing forming a cavity with an opening for receiving at least a portion of said plug, a receptacle first inner contact mounted on said housing, and a receptacle outer contact mounted on said housing, wherein:

said plug includes coaxial inner and outer plug contacts for engaging said receptacle first inner contact and outer contact, respectively;

said plug inner contact is resiliently biased downward and is deflectable upward with respect to said plug outer contact;

a stop that lies under said receptacle first inner contact, whereby after said plug inner contact presses down said receptacle first inner contact against said stop said plug outer contact can continue to move down until it lies in firm engagement with said receptacle outer contact.

10. The system described in claim 9 including a circuit board, said receptacle being mounted on said circuit board, and wherein:

said receptacle includes a receptacle second inner contact, said receptacle first inner contact including a beam that is biased upward to lie a distance above said stop and against said receptacle second inner contact, said beam being downwardly deflectable out of engagement with said receptacle second inner contact and against said stop;

said circuit board has an upper face lying directly under said beam and

forming said stop.

11. The system described in claim 9 wherein:

said receptacle is mounted on said circuit board;

said circuit board has an upper face with a trace forming said stop;

5 said receptacle first inner contact includes a deflectable beam that is downwardly deflectable against said trace forming said stop.

12. A connector system comprising a circuit board, a receptacle and a plug for mating with the receptacle, wherein the receptacle includes a housing mounted on the circuit board and forming a cavity with an entrance for receiving said plug, first and second receptacle contacts mounted on said housing, said first contact including a resilient beam biased upward into engagement with said second contact but being resiliently deflectable downwardly by said plug out of engagement with said second contact, wherein:

5 said circuit board has an area lying directly under a part of said beam, so said beam engages said circuit board area when said beam is downwardly deflected by said plug.

13. The connector system described in claim 12 wherein:

5 said plug includes a plug outer portion that can be pressed toward said housing only to a predetermined position, said plug has a plug housing and said plug has an inner contact with a tip, said inner contact being slideable up and down in said plug housing, and said plug has a spring that urges said tip downward beyond said housing, said plug inner contact being slideable sufficiently that said tip presses said beam against said circuit board area when said plug outer portion lies in said predetermined position.

14. A connection system that includes a plug and a receptacle that has an opening that receives a portion of the plug, wherein:

5 said plug includes a plug housing, a plug inner contact with a tip, said plug housing having a largely vertically-extending passage said plug inner contact being slideable in said passage, and a spring that urges said plug inner contact to slide downward, said tip lying below and outside of said passage when not deflected upwardly.

15. The connection system described in claim 14 wherein:

 said plug is a coaxial plug with a plug outer contact lying on said plug housing around said plug inner contact.

16. The connector described in claim 14 wherein:

5 said receptacle includes a receptacle housing and inner and outer receptacle contacts mounted on said receptacle housing, said outer receptacle contact positioned to engage said plug outer contact while said plug inner contact engages said receptacle inner contact.

17. The connection system described in claim 14, including:

 a circuit board with a conductive trace;

5 said receptacle has a first contact with a deflectable portion that is engaged by said tip of said plug inner contact with said deflectable portion deflected against said conductive trace.

5 18. A connector system comprising a receptacle and a plug for mating with the receptacle, wherein the receptacle includes a housing forming a cavity with an entrance for receiving said plug, and first and second receptacle contacts mounted on said housing, said first contact including a resilient beam biased upward into engagement with said second contact but being resiliently deflectable downwardly by said plug out of engagement with said second contact, wherein:

 said first contact is formed of sheet metal and has a mounted part that is

fixed to said housing, and said beam has a largely flat portion extending forwardly from said mounted part, said flat portion having a front part with walls forming a hole, said walls forming a hole having a front end, and said first contact forms a tongue extending at a rearward and downward incline from said hole front end.

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19. The connector system described in claim 18 wherein:
said tongue has a lower end that is substantially flat and horizontal.